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A COMPARATIVE INVESTIGATION OF THE INSTRUCTIONAL AND ADMINISTRATIVE EFFICIENCY OF VARIOUS OBSERVATIONAL TECHNIQUES IN THE INTRODUCTORY COURSE IN EDUCATION.

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THE EFFECTIVENESS OF SIMULATED AND OF ACTUAL OBSERVATIONS OF PUBLIC SCHOOL CLASSROOMS WERE COMPARED FOR THE INTRODUCTORY COURSE IN A SEQUENCE OF FIVE COLLEGE COURSES REQUIRED IN TEACHER TRAINING. A TOTAL OF 151 STUDENTS IN FOUR SECTIONS OF THE INTRODUCTORY COURSE WERE RANDOMLY ASSIGNED TO THREE GROUPS WHICH--(1) OBSERVED A MINIMUM OF 30 HOURS IN ELEMENTARY AND SECONDARY PUBLIC SCHOOL CLASSROOMS, (2) OBSERVED A MINIMUM OF 10 HOURS IN ELEMENTARY AND SECONDARY PUBLIC SCHOOL CLASSROOMS FOLLOWING 10 HOURS OF ON-CAMPUS PROGRAMED OBSERVATION EXPERIENCES CONSISTING ENTIRELY OF SOUND MOTION PICTURES, SOUND FILMSTRIPS, SLIDE AND TAPE PRESENTATIONS, AND TAPE RECORDINGS, OR (3) OBSERVED 10 HOURS OF ON-CAMPUS PROGRAMED OBSERVATION EXPERIENCES ONLY. TEN 53-MINUTE PERIODS OF PHOTO-SOUND OBSERVATION EXPERIENCES WERE PREPARED UTILIZING 8MM SOUND MOTION PICTURES AND 35MM SLIDE-TAPE PROGRAMS. THE 10-HOUR ON-CAMPUS PLUS 10-HOUR OFF-CAMPUS TECHNIQUE PROVED SUPERIOR TO THE OTHER TECHNIQUES IN THE DEGREE TO WHICH STATED OBSERVATION UNIT OBJECTIVES WERE MET. (JM)

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FINAL REPORT

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Microfilm copies of the author's doctoral dissertation, bearing the same title as this report and completely detailing procedures, raw score data, and statistical analyses, are available from University Microfilms, Ann Arbor, Michigan.

Desmond P. Wedberg,
Principal Investigator
Los Angeles
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CHAPTER I

THE PROBLEM

Introduction

The development of professional education curricula is characterized by a concern for the proper balance between learning by direct experience and learning vicariously. While analytical studies the past 40 years have consistently recommended the balance should swing toward more direct learning experiences in pre-service teacher training, practice steadfastly has clung to vicarious experiences presented by lecture and text in the academic setting. Research relating to classroom observation activities, on the other hand, has advocated moving from a direct learning experience toward vicarious learning through such newer educational media as motion pictures and television.

A group of recently-completed and currently-ongoing NDEA research studies gives one in overview a "time is ripe" impression concerning the educational media approach to vicarious classroom observational experiences. [See Fulton and Rupiper (2), Painter (4), Patrick (5), Follis (1), and Schueler (6).] Several factors, related but developing independent of each other the past 30 years, have contributed to the current interest in the vicarious.

First, the growing body of educational media research showing instruction with television, films, filmstrips, slides, and tape

recordings to be as effective as or superior to conventional instruction has reached a magnitude that commands attention--and acceptance--by those genuinely concerned with the problems created by the knowledge and population explosions of recent years. A second factor is the pragmatic observation that teachers teach as they were taught. Today's teacher-in-training has experienced instruction by technological media as an elementary and secondary school student, and she is willing to become sophisticated in the use of these teaching tools if examples of proper utilization and achieved objectives are provided throughout the professional training period.

Another factor contributing to the current interest in direct versus vicarious classroom observation for in-training teachers has developed from the changing pattern of professional training research. From normative surveys of teaching as it is, research has upgraded itself toward experimental appraisals of teaching as it could and should be. Experiments in team teaching, teacher interns, teaching assistants and aides, large and small group instruction, re-grouping of subjects in the curriculum, re-grouping of students in classes, and a genuine concern for the gifted and retarded are but a few of the developments that have forced on the observation activity in introductory professional education courses a quantitatively greater scope.

This greater scope has developed a final factor of particular importance to this study. As experimental research changes the role

of the teacher, the physical proportions and arrangement of the classroom, and the relationship of the teacher to the school and the school to the community, the problems of administering an effective and efficient school visitation program to teachers-in-training become increasingly complex. As more prospective teachers enter training, administrative costs increase, students must travel farther to visitations, and integrating extended off-campus visitations with rigid on-campus class schedules becomes more difficult.

Background

With the above-stated problems as a frame of reference, this study developed from the expressed need by the administration and faculty of the University's Teacher Education Department to re-examine, through research, the entire teacher training sequence, beginning with the introductory course and especially one segment of that course, the observation unit.

The course, Education TT 301, The Teacher and the School, is the first of a five-course "Introductory Sequence in Education" at the University of Southern California required of all candidates for the University's recommendation for teaching credentials. EDTT 301 is a one-semester course giving four units of credit and is prerequisite to the other courses in the introductory sequence. It is intended to precede directed teaching by at least one semester. Designed primarily for future teachers, the course includes materials usually covered in separate courses in each of the following fields: history of education in the United States, principles of elementary

education, principles of secondary education, and introduction to teaching.

"The purpose of EDTT 301 is the broad one of introducing the beginning student of education to the total educational enterprise of our nation" (3:1). The course also helps the beginning student in education decide whether or not a teaching career is appropriate for him and if so, toward what kind of teaching he should direct his pre-service professional preparation.

EDTT 301 is designed as a lecture-discussion-laboratory experience. Students meet in a lecture hall with an instructor three times per week for a 53-minute lecture-discussion period. The laboratory experience requires that each student spend a minimum of 30 hours in guided classroom observation at the elementary and secondary levels to gain insight into the role of the teacher, into the various kinds of teaching and school positions, and into the problems of the teacher and the school. It is not intended to instruct in curriculum methods or teaching techniques. This laboratory experience, or observation unit, was the point of focus of this study.

Statement

It was the purpose of this study to compare the relative effectiveness of the observation unit in EDTT 301 when using three different procedures with three comparable groups of students: (a) observing a minimum of 30 hours in elementary and secondary public school classrooms; (b) observing a minimum of 10 hours in elementary

and secondary public school classrooms following 10 hours of on-campus programed observation experiences consisting entirely of sound motion pictures, sound filmstrips, slide and tape presentations, and tape recordings; and (c) observing 10 hours of on-campus observation experiences consisting entirely of sound motion pictures, sound filmstrips, slide-tape presentations, and tape recordings.

"Relative effectiveness" as stated above implied the measurement of instructional efficiency in evaluating the three techniques of observation. Implicit also was the comparison of the administrative efficiency of these three techniques of observation. Viewed as a feasibility study, the scope of the problem included a comparison of time, expense, personnel and student deployment factors among the three observational techniques.

This study attempted to verify experimentally the hypothesis that no differences of gains in instructional achievement and administrative efficiency for the observation unit of EDTT 301 would result when less in-the-field observation combined with on-campus programed audiovisual observational experiences were substituted for the traditional 30 hours of in-the-field observation; or when only on-campus programed audiovisual observational experiences were substituted for the traditional 30 hours of in-the-field observation.

It was an unstated assumption that this study, experimenting with simulated observation and actual observation, would find that some combination of both observation techniques was superior to either technique used independently.

Experimental Design

In selecting the design of the study, all students registered in the four sections of the course during the fall 1961-62 semester would be randomly-assigned to two experimental groups (A and B) and one control group (C).

The experimental design was conceived to fulfill six objectives: (1) to meet the current objectives of the observation unit as stated in the course syllabus (3:45); (2) to test the hypothesis that equivalent learnings will result from the three observational techniques; (3) to analyze student and staff factors leading to a more efficient administration of the observation unit; (4) to present a greater variety of common observation experiences through the use of simulated sight and sound classroom visitations; (5) to create inexpensive simulated observation experiences using a variety of newer instructional media designed for present and future course needs; (6) to design a feasible operational procedure to insure the optimum in administrative and instructional efficiency in future offerings of the course.

Three groups of testing instruments had to be selected or constructed to measure and correlate the findings of the study in terms of the above objectives: (1) instruments to measure factual learning, (2) instruments to measure administrative efficiency, and (3) instruments to evaluate the observation experiences.

The statistical approach to the study was concerned primarily with the post-test and several possibly-related variables in testing the hypothesis of equivalent factual learnings among the three

observational techniques. For this test, analysis of variance would be employed. Other statistical measures would include chi square, proportional analysis, and the General Kuder-Richardson reliability formula.

CHAPTER II

METHOD OF PROCEDURE

Creating the Experimental Materials

Prior to the creative phase of the study, an investigation of the observation unit as traditionally offered was used as a starting point. Then followed a pilot study with EDTT 301 students during the semester immediately preceding the study. The pilot study served to indicate areas in which specific tests and questionnaires would have to be created, and served to structure the basic content to be covered in the simulated observation unit on campus. To compare administrative efficiency factors between the traditional unit and the experimental techniques, a minimal-cost production system for the simulated observation program had to be developed utilizing 8mm sound motion pictures and 35mm slide-tape programs.

The basis for measuring comparative instructional gain was a 60-item multiple choice pre-test, administered to all subjects prior to undertaking observation and later administered as a post-test to all subjects completing the observation unit. This test was validated to its final form from an initial 86-item pilot test. Items for this test were based on factual information concerning the teacher and the school presented during various classroom visitations made by the investigator in the company of EDTT 301 student observers during the semester prior to the study. This factual information served also to structure the content of the 10 periods of simulated

observation experiences programed for the experimental groups on campus. Instruments to measure possibly related variables included a nationally-standardized intelligence test (8); the Professional Aptitude Test, a locally-developed teaching aptitude scale used primarily for counselling purposes; the Environmental Pre-Set Scale, a rating scale developed for the study to isolate specific environmental factors brought to the observation unit that might give an advantage to some subjects in achievement on the pre-test and post-test; and a jury of experts evaluation involving the four lecture-discussion section instructors.

Administrative efficiency factors were measured by the investigator's personal observations, interviews with staff and students in EDTT 301, and by specific items inserted into the pre- and post-observation questionnaires and the Classroom Observation Report form.

Data to evaluate the observation unit as variously presented derived from the pre- and post-observation questionnaires, the Classroom Observation Reports completed by all observing students, and an Observation Programs Evaluation Checklist to be completed by students participating in the experimental observation groups.

Paramount to creating ten 53-minute periods of photo-sound observation experiences for on-campus presentation to the experimental groups was the modification of auto-instructional programed learning techniques to fit the needs of a small-group instructional system dictated by the scheduling, physical space, and equipment limitations of the study. Then followed a minimal-cost materials

production methodology which considered production personnel and their functions; and production equipment, materials, and their capabilities.

In planning the 10 periods of on-campus simulated observation experiences, a scope and sequence content outline was conceived that would present a great variety of classroom and extra-class experiences from kindergarten through grade 12. From a variety of cooperating school districts, photo-sound materials for 20 distinct programed lessons were gathered. To fit the time limitations of the 10 programed periods, 16 lessons were edited to final form. These are listed in Table 1. Preparatory and follow-up materials in the form of tape recordings and printed matter were added to the programed lessons on the day preceding each period to allow for flexibility, currency, and unanticipated contingencies that might occur during the day-to-day administration of the simulated observation unit.

Conducting the Study

At the beginning of the fall 1961-62 semester, preliminary procedures included a staff orientation meeting to prepare all involved for the observation experiment to follow; administering the pre-observation questionnaire to determine classroom observation schedules for the student population; randomly-grouping the student population into numerically-equivalent 10-hour (Group A), 20-hour (Group B) and 30-hour (Group C - Control) groups; and revising the pilot pre-test to be used as an identical-form pre-observation and post-observation test.

TABLE 1

ON-CAMPUS PROGRAMED OBSERVATION SEQUENCES

Period		Subject	Presentation Medium	Printed Materials	Observation Report No.
1	A.	Introduction to Observation Evaluation	tape recording	x	
	B.	Professionals and the Profession	tape recording captioned soundstrip	x	
2	A.	Guidance Principles for the Classroom Teacher	color soundstrip	x	
	B.	Problems of Elementary Classroom Management	16mm color sound film	x	
3	A.	Extra-Class Responsibilities of Primary Grade Teachers	8mm sound film		1
	B.	First Grade Observation	8mm sound film		1
4	A.	Elementary Grade Teaching Techniques	7 color soundstrips	x	2
	B.	Elementary Grade Teaching Techniques (continued)	7 color soundstrips	x	3
5	A.	Second Grade Observation	16mm kinescope	x	4
	B.	The Teacher Supports the School Community	8mm sound film color soundslide	x	5

TABLE 1 (continued)

Period		Subject	Presentation Medium	Printed Materials	Observation Report No.
6	A.	Seventh Grade Observation	8mm sound film, tape recording	x	5
7	A.	District Guidance Support to the Teacher	color soundstrip	x	
	B.	Eighth Grade Observation-English	color soundstrip	x	6
8	A.	Eighth Grade Observation-Science	8mm sound film color soundslide	x	7
	B.	Ninth Grade Observation	8mm sound film	x	8
9	A.	Eleventh Grade Observation	8mm sound film		9
	B.	Twelfth Grade Observation	8mm sound film		10
10	A.	A Bright Picture for the Future Teacher	color soundslide	x	
	B.	Summation and Final Instructions	tape recording	x	

Administering the observation units began with the scheduling of off-campus elementary school observation for students in control Group C. Students in all groups were then administered the pre-observation test. Weeks five through ten of the term were used to administer the 10-period on-campus programed observation unit to Groups A and B in small classes of 15 students or less. In some instances self-instructional techniques were employed during which the students themselves selected the learning materials and operated small rear-screen sound filmstrip projectors. The facilities for the small-group and self-instructional on-campus programed sequence are illustrated in Figure 1. Toward the end of this period in the semester, Group C students were scheduled into off-campus secondary schools for 15 hours and Group B students were scheduled for their 10 hours of off-campus classroom observation. Following this, the School and College Ability Test (IQ) was administered to all EDTT 301 students. Next came a week of makeup periods for Group A and B students absent from the original photo-sound presentations on campus. Finally, the observation unit experiment concluded with the administering of the post-observation test and questionnaire to all subjects at the end of the fifteenth week of the semester.

The final phase in conducting the study, prior to an analysis of the findings, was the organization of the collected data. Nine variables concerned with the matching verification of the three randomly-selected groups and six variables concerned with the comparative instructional achievement of the three groups were tabulated

Classroom used for small-group instruction in Department of Instructional Technology

Rear-screen sound filmstrip projector used for individual and small-group instruction

FIGURE 1

FACILITIES USED FOR ON-CAMPUS PROGRAMED OBSERVATION UNIT

for processing in an analysis of variance computer program. The balance of the data collected, necessary to compare the administrative efficiency factors among the three observational techniques employed as well as to evaluate the students' reactions to the various types of observation units presented, was organized into numerical totals and frequency distributions for interpretation by simple proportional analysis and chi square.

CHAPTER III

PRINCIPAL FINDINGS

Equivalent Learnings Statistical Data

To test the hypothesis that no significant differences in measurable learning would result from the three observational techniques used, a 60-item multiple-choice test was developed and administered as a pre-test prior to the beginning of the observation experiment and 13 calendar weeks later, at the conclusion of the observation activity, as a post-test.

Applied to the pre-test scores of the 151-student statistical sample, the analysis of variance test revealed that the two experimental groups and one control group were statistically equivalent. Subsequently, the analysis of variance test for a randomized design was employed for testing significant differences among the three groups for 8 group-matching variables and 6 instructional achievement variables. (See Table 2.) It was found that none of the group-matching variables were significant at the .05 level of confidence, and thus assumed that the three groups, randomly selected, were equivalent as to sex, age, intelligence, professional aptitude, and environmental background for purposes of the study.

Of the instructional achievement variables, significant differences between the groups were found not to exist in jury of

TABLE 2

SUMMARY OF ANALYSIS OF VARIANCE TEST

	F Value	P < .05	P < .01
Group Matching Variables:			
Sex	.50		
Age in years	.21		
SCAT total	.21		
SCAT math,	1.10		
SCAT verbal	1.80		
PAT English	.31		
PAT culture	2.54		
Environmental pre-set	1.88		
Pre-test	.20		
Instructional Achievement Variables			
Post-test	20.14	x	x
Gain	18.56	x	x
Jury of Experts-1	2.49		
Jury of Experts-2	4.50	x	
Final exam. grade	2.49		
Course Grade	1.65		

experts evaluations, final examination grade, and final course grade. Proof of the equivalent learnings hypothesis hinged on the significance of results of the three groups on the post-test, and it was found that differences among the groups did exist at the .01 level, as reflected in Table 2. The F test determined that the groups did not significantly differ in terms of variability. The differences between the three pairs of means were evaluated by t tests and it was found that both experimental groups were very significantly (.01) superior to the control group on the post-test, but not significantly different of each other.

The hypothesis that no significant differences in measurable learning would result from the various observational techniques was rejected. Stated positively: the students who observed on-campus for 10 hours only and the students observing on-campus for 10 hours prior to 10 hours of off-campus classroom visitations achieved higher scores on the post-test than did the students who observed off-campus in classrooms for the traditional period of 30 hours, and the comparative achievement scores were statistically significant at the .01 level of confidence. Application of the General Kuder-Richardson formula yielded a reliability coefficient for the post-test of .53.

Comparable to the post-test findings, the group mean gains between the post-test and pre-test were significantly different at the .01 level, with the experimental groups reflecting greater margins of success than the control group. Figure 2 graphs the mean gain by groups. Between the two administrations of the 60-item

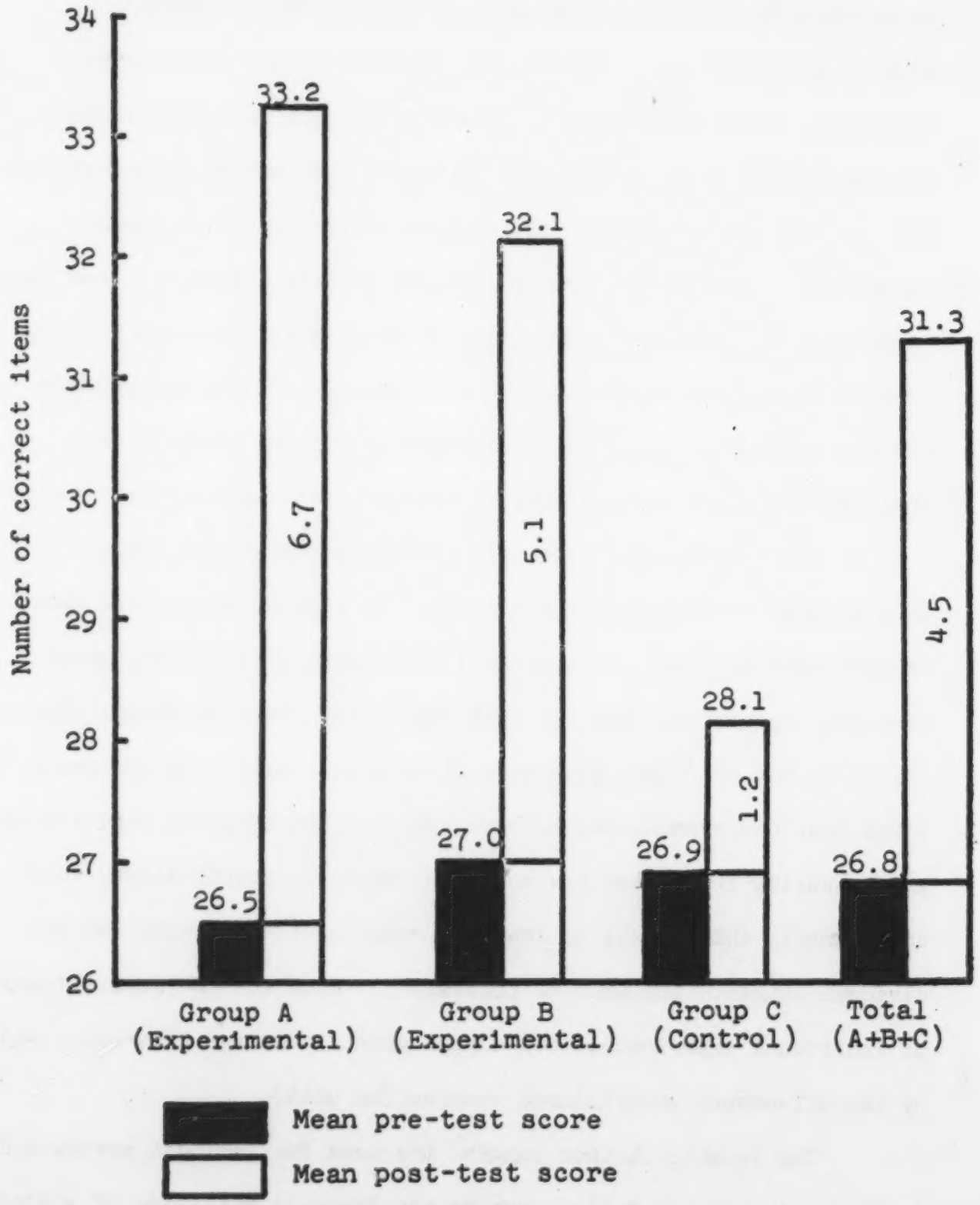

FIGURE 2

MEAN GAIN FROM PRE-TEST TO POST-TEST
OF EXPERIMENTAL AND CONTROL GROUPS

test, Group A achieved a mean gain of 6.74 correct responses; Group B gained by 5.14; and Group C improved by but 1.19 correct responses. When percentage of gain from the pre-test mean scores was considered, Group A advanced 25.43 per cent while Group C gained but 4.42 per cent, a ratio of 5-2/3:1. Despite these dramatic comparisons between the experimental and control groups, it must be noted that the post-test mean score of the highest group (A), 33.24 correct responses, represents but 55.4 per cent of the 60-possible correct responses, and almost one-fourth (24.5 per cent) of the students failed to score higher on the post-test than on the pre-test.

The findings from the pre-test, post-test, gain complex of data indicate that superior achievement on a paper-and-pencil test results when the test is structured to measure pre-planned, known learning experiences commonly received by the learning group (characterized by the on-campus programed observation unit). In contrast, lower test achievement may be expected when the learning experiences and measuring instrument are not pre-planned in coordination, when the quantity and quality of learning experiences vary with the individual student, and when no provision is made for the generalization of individual experiences into common group learnings (characterized by the off-campus unstructured observation unit).

The results further suggest the need for periodic review and group sharing to reinforce learning and increase retention of subject matter presented. Applying the programed learning principle of not proceeding to the unknown until the known is learned would possibly

have produced much higher post-test scores from the experimental group members. Finally, the absence of gain among one-fourth of the total sample, two-thirds of which were in Group C, possibly resulted from the students' knowledge that post-test scores would in no way affect their final grade in the course.

As part of the analysis of variance procedure, within-group and total groups correlation coefficients were determined for the 15 group matching and instructional achievement variables (listed in Table 2). Within-group variable correlation generally was less than .50. Total groups correlation coefficients .50 and higher revealed marked relationships between the IQ measure and the sections of the Professional Aptitude Test, and between final examination grades and course grades. Coefficients higher than .70 were obtained only within the IQ measure (SCAT).

Instructional and Administrative Efficiency Data

The balance of the findings of the study are reported here according to the remaining five objectives of the experimental design.

Meeting stated observation objectives

Of the several objectives for the observation activity stated in the course syllabus, the first was concerned with providing the student in EDTT 301 an overview of the school and education at the various levels. Comparative group data revealed that in the total 2,934 visitations to 21 school districts reported by the 151-student population, every student in Group A made 18 visitations in 10 hours

to seven school districts while each Group B student made 24.3 visitations in 20 hours to 7.3 districts and Group C students reported 15.8 visitations in 30 hours to a mean 1.1 school districts. Within the schools of these districts the mean number of grades observed at the elementary level was 5.00, and 4.08 grades at the secondary level. Each on-campus technique (experimental) student observed at least 6 elementary and 5 secondary grades, while the control group observed a mean 44 per cent less grades off campus.

Analysis of the variety of curricular subjects observed showed that each member of the on-campus experimental groups observed the teaching of at least 6 different elementary school subjects and 9 secondary subjects. The off-campus control group observed a mean 18 per cent more elementary subjects than the experimental groups, but 13 per cent less secondary curricular subjects.

Of total reported observations at the elementary level, 30.9 per cent were of language arts classes, followed in rank order by science, social studies, arithmetic, art, and physical education classes. The greatest deviation between the on- and off-campus observers was in science classes; the on-campus groups observed 6.3 times as many elementary science classes as the off-campus. In secondary schools, 50.2 per cent of reported visitations were made to observe English and social studies classes out of a total 60 different curricular subjects observed.

The student population reported observing 2,553 teachers at work in classrooms. At the elementary school level 64.1 per cent of these teachers were female, while in secondary schools 42.6

per cent of the observed teachers were female. Each member of the on-campus Group A observed 14 different teachers via film, while Group B students observed an average 19.88 teachers in their on- and off-campus visits, and Group C students observed a mean 17.67 teachers entirely off-campus.

Team teaching was observed in 17 per cent of the on-campus filmed classes and in 3 per cent of the off-campus classes. While no observations of retarded or other special education classes were reported, and a pittance of accelerated- and slow-learner classes at the elementary level, approximately one-third of secondary classroom observations reported by all groups were of classes homogeneously segregated by ability.

Observation of the school community outside the classroom accounted for 20 per cent of the on-campus programed unit's total time, while in 49.4 per cent of the observations made off campus the observers reported "nothing observed" about the school plant and extra-classroom facilities. Table 3 clusters the extra-classroom observation data for the off-campus observation groups.

Group B students, following completion of the on-campus unit which was expected to motivate these students toward total school observings during their off-campus 10 hours, reported "nothing observed" off campus outside the classroom a disappointing 58.7 per cent of the time. Of the extra-classroom observations reported by the off-campus groups, the psychological atmosphere of the school (friendliness of staff and students, respect for rules,

TABLE 3

EXTRA-CLASSROOM OBSERVATIONS OF OFF-CAMPUS GROUPS

	Group B	Group C	Totals in %
Nothing observed	343	315	49.4
Psychological atmosphere	55	171	17.0
Physical plant	61	68	9.7
All-school activities	86	31	8.8
Non-classroom instructional facilities	24	59	6.3
Administrative facilities and procedures		79	5.9
Teachers' facilities and responsibilities	15	24	2.9
	584	747	100.0

etc.) ranked highest among school community reportings, followed by observation of the physical plant (including the parking lot).

A second facet of the overview objective was concerned with the observation unit offering a practical framework for the theory courses to follow. The intensity of the observation experience in providing a practical framework was measured from a 12-question checklist on the daily Classroom Observation Report indicating observed or not observed teacher-learner-environment characteristics. Figure 3 summarizes the observed characteristics of on- and off-campus observations as reported by 2,103 completed checklists for

the following 12 questions.

A. Did the students work with purpose toward their goals?

B. Did each student make a contribution to the group?

C. Were students helping each other?

D. Was the teacher friendly to the students while maintaining the role of an adult?

E. Were the students guided in securing and utilizing information which promotes concept development?

F. Were students helped to evaluate their own work and that of the group?

G. Did the teacher accept students' ideas and incorporate them in the learning process?

H. Did the teacher contribute to the school outside the classroom?

I. Was the classroom organized in work and interest centers to meet individual and group needs?

J. Did the students participate in planning and organizing the learning environment?

K. Were the instructional materials organized so that they were accessible to and usable by the students?

L. Did the arrangement of furniture allow for ease of traffic, flexibility of working groups, and for friendly, informal relationships?

While the Figure 3 summary reveals a pattern similarity between the classrooms observed via film on campus and those observed off campus, it must be noted that certain on-campus filmed observations were designed to emphasize specific teacher-learner-environment characteristics while excluding other characteristics asked by the 12-question checklist.

Thus, an analysis of off-campus observations by elementary

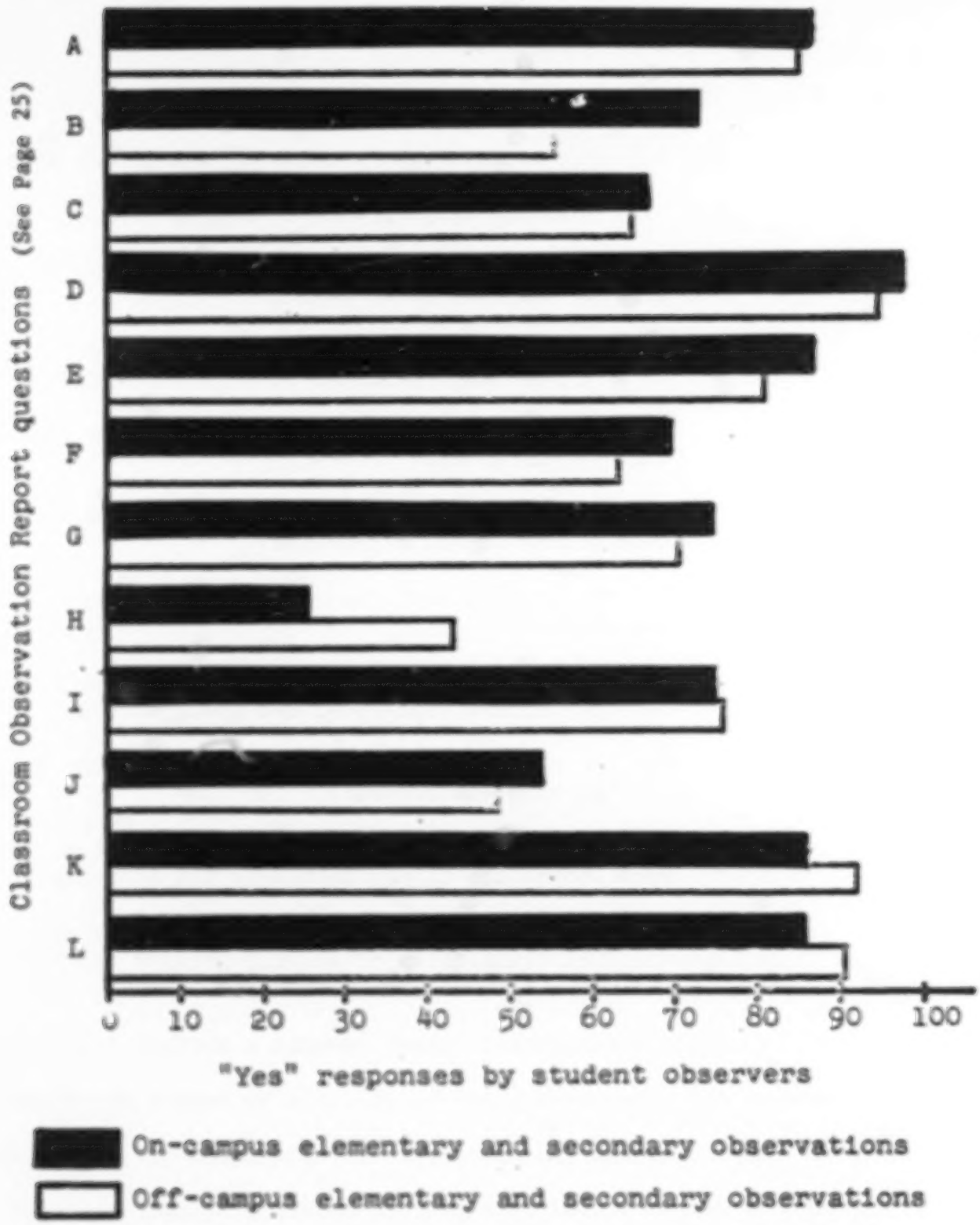

FIGURE 3

CONTENT ANALYSIS SUMMARY OF CLASSROOM OBSERVATIONS, IN PERCENTAGES

and secondary levels and on-campus observations period by period revealed that on question A student observers 94 per cent of the time reported observing elementary classes in which the students were working with purpose toward their goals, and 78.3 per cent of the time in secondary school classes. The two on-campus film observations in which a lower percentage of purposeful work was reported were high school classes of slow learners.

With the question (B) asking if the student observed made a contribution to the group, affirmative answers were reported a majority of the time by off-campus elementary and secondary observers, and in a majority of cases with the on-campus programs, with one exception--one of the high school slow-learner classes. Results from the question (C) on students observed helping each other indicated group dynamics at work in approximately two-thirds of all classrooms observed, on- and off-campus, with the exception of one filmed slow-learner class.

Responses to the five questions (D,E,F,G,H) about observed teachers at work revealed that in nine out of every 10 classrooms the teacher was friendly to the students while maintaining the role of an adult, and in eight of every 10 classrooms observed, both on- and off-campus, teachers were reported guiding students in securing and utilizing information which promoted concept development. At least six in every 10 teachers observed by all groups were reported to have helped students to evaluate their own work and that of the group. The one on-campus programed observation that was designed to emphasize this teaching responsibility succeeded with 98.9 per

cent of the Group A and B observers.

All groups reported that two-thirds of the teachers observed accepted students' ideas and incorporated them in the learning process. The two on-campus programs emphasizing this good teaching responsibility received affirmative responses from 98.9 and 96.7 per cent of the observers. The lowest affirmative-response percentages on the checklist were recorded when student observers were queried about teacher contributions to the school outside the classroom; 43.1 per cent for elementary teachers and 31.2 per cent for secondary teachers observed. By comparison, the two on-campus film programs which integrated the teacher's classroom with extra-classroom responsibilities received observer recognition by 90.9 and 91.6 per cent of the students.

For three questions (I,J,L) concerned with observed "environment facilitates learning" evidence, Group B students reported from 16.7 to 22 per cent less observation of good practices in secondary school classrooms than did Group C members. As the same districts and classrooms were visited by both groups, it would appear the experimental group students brought to the off-campus classrooms a more critical frame of reference as the result of their previous on-campus film programs which had emphasized the learning environment concept in five of the 10 observation periods. When asked if the classroom was organized in work and interest centers to meet individual and group needs, checklist affirmative responses totaled 84.5 per cent for elementary classrooms and 67.3 per cent

for secondary classrooms.

To the inquiry about students participating in planning and organizing the learning environment, a total mean affirmative response of 50 per cent was reported by the observers, yet the one on-campus program emphasizing this much-advocated teaching-learning procedure produced an affirmative response of 92.4 per cent of the checklists. A third learning environment question asked if the arrangement of furniture allowed for ease of traffic, flexibility of working groups, and for friendly, informal relationships. This physical environment feature was observed by all groups 92.2 per cent of the time in elementary classrooms and 85.9 per cent in secondary classrooms.

A final question (K) asked if instructional materials were organized so that they were accessible to and usable by the students. They were, for all groups, in 93.9 per cent of elementary classrooms and 84.1 per cent of secondary classrooms observed. In the on-campus programs, checklists contained not one negative response to this question in seven of the 10 observation-on-film lessons.

Another facet of the first stated objective for the observation unit was that of helping the beginning student in the professional education sequence to decide if teaching was the right career, and if so, which level. Every one of the 151 students completing the observation activity during the study planned to continue training toward a career in education, and 46 per cent of the study population changed their grade level teaching preference at least one grade. While the tendency was to change within

a level, i.e., potential primary teachers shifted within the primary grades, potential junior high school teachers shifted within grades 7, 8, and 9, etc., one student changed 12 grades--from a before-observation preference for junior college instruction to a post-observation preference for first grade teaching. Of those changing teaching level preference one or more grade, by observation techniques, 52 per cent of the students in Group A shifted, 42 per cent of Group B, and 43 per cent of control Group C. Group differences proved not significant. Of the 75 potential secondary school teachers in the study population, but 11 (15 per cent) changed the subject or subjects they most wanted to teach as the result of their EDTT 301 experiences.

The second stated objective of the observation unit was to acquaint the student observer with the classroom and teacher responsibilities. As the entire structure of the experiment was designed to meet this objective, much data was gathered for evaluation. In large part, the post-test attempted to measure degree of acquaintance, and the superior achievement of the experimental groups on this test would indicate the objective was satisfactorily met by Groups A and B. When seven teacher responsibilities were isolated and rated by all groups (Table 4), it was found that most understanding was gained of the teacher's role as an instructor and classroom administrator and least understanding was of the teacher's personal characteristics. The latter was explained (Table 5) with the finding that 69.2 per cent of the off-campus observation visits

TABLE 4

UNDERSTANDING OF TEACHER RESPONSIBILITIES GAINED FROM OBSERVATION EXPERIENCES

	Group A on-campus		Group B on-campus		Group B off-campus		Group C off-campus	
	Mean Score	Rank Order	Mean Score	Rank Order	Mean Score	Rank Order	Mean Score	Rank Order
Teacher Responsibility								
Instructional effectiveness	2.92	1	2.62	1	2.64	1	2.96	2
Student growth	3.29	2	3.44	2	3.56	4	3.94	4
Teacher-student relationship	3.58	3	3.80	4	2.92	2	2.70	1
Classroom management	3.85	4	3.74	3	3.06	3	3.70	3
Physical and mental fitness for teaching	4.40	5	4.78	6	4.94	5	4.09	5
Professional ethics and basic attitudes toward the teaching profession	4.81	6	4.44	5	5.12	6	4.32	6
Contributions to school beyond classroom	5.04	7	5.18	7	5.56	7	6.30	7

TABLE 5

TEACHER EFFORT TO INTERPRET CLASS PROCEDURES TO STUDENT OBSERVERS

	Group B off-campus		Group C off-campus		Totals in %
	elem.	sec.	elem.	sec.	
No communication	97	157	222	269	69.2
Conference before/after class	15	15	47	65	13.0
Conference during class	16	59	72	33	16.7
Showed lesson plan and text			8	3	1.1
Total Responses	128	231	349	368	100.0

included no personal communications contact with the teacher observed, and, of course, the on-campus observers had no contact with the teachers they observed via film.

The final stated objective of the observation unit was to give the student observer an opportunity to work with children. This was an admitted limitation of the study design for the on-campus unit, and it was expected that this participation activity would prove to be the strength of the off-campus in-school observations. However, it was found that 71.4 per cent of the off-campus observers were not given assisting duties during observation visits, and but 14 per cent of the off-campus groups engaged in any working contact with pupils in the classroom. While the principals of the off-campus schools observed were instructed that the student observers could not legally assume any teacher responsibilities, a letter

from the University's director of teacher education to each participating principal did suggest that the teachers visited assign a succession of duties and listed 14 such duties the student observer might undertake. These duties and subsequent findings appear in Table 6.

Optimum time/learning enrichment of common observation experiences

This design objective gathered data in an attempt to arrive at an optimum length of time for the observation unit in which an optimum amount of learning experiences could be presented to all EDTT 301 students. Of 12 isolated common learnings categories, responses to open-ended questions on the post-observation questionnaire revealed greatest new learnings in the area of teaching techniques, followed by "how students learn," "student characteristics," and "teacher characteristics" in rank order. Relating the 12 common learnings factors to the number of questions raised by the observation experience but never answered, here again teaching methodology ranked first, followed by "curriculum," "grouping of class," and "school community factors." Last ranked category for both new learnings and unanswered questions was "teacher-student relationships."

When observation techniques were compared in terms of total hours involved, it was found that Group A students felt 10 or more off-campus hours should be added to their 10-hour on-campus programed unit; Group B students were satisfied with their 10 hours on-campus and 10 hours off-campus arrangement; and Group C members were

TABLE 6

DUTIES ASSIGNED STUDENT OBSERVERS DURING OFF-CAMPUS VISITATIONS

	Group B off-campus elem.	Group B off-campus sec.	Group C off-campus elem.	Group C off-campus sec.	Totals in %
Help with schoolroom housekeeping records, or other routine	5	6	59	5	6.7
Assist in the administration and scoring of tests	9	6	23	5	3.9
Assist teachers with individuals or small groups for drill and other help	36	11	94	12	14.0
Find suitable materials for work in progress				1	.1
Organize and file materials for a unit of work					
Mount pictures and other materials	5				.5
Help with audio-visual aids			4	1	.5
Bring special reports and lead discussion		7	5	10	2.0
Prepare radio or motion picture bulletins					
Help in library					
Find helpful professional books on problems raised by regular teacher				1	.1
Help with assembly					
Meet with school club					
Help arrange a bulletin board	3		6		.8
No duties assigned	96	176	187	320	71.4
Total Responses	152	206	378	355	100.0

satisfied with their 15 hours in off-campus elementary schools and 15 hours off-campus in secondary schools. All groups indicated a desire to have the lectures and assigned readings of the course more closely related to the observation activity. Three times as many Group C students felt the need for more preparation in what to look for during observation than the members of the experimental groups.

In a comparison of the on- and off-campus techniques by the members of Group B, the most-often listed advantage of the on-campus technique (Table 7) was the acquired broader base of understanding of the teacher and the school resulting from the greater variety of grades and subjects observed. The reality of the classroom atmosphere and personal contact with teachers and students were the advantages most mentioned (Table 8) for the off-campus technique. Comparing the 25 advantages listed for both techniques by Group B, it was apparent that one technique's strength tended to be the other technique's weakness, and suggests an integration of both techniques in future administerings.

Administrative efficiency factors inherent in the traditional off-campus observation technique

Time spent at schools per observation visit ranged from one to eight hours with a two-hour visitation most often recorded. Group B students averaged 29.1 per cent more time in off-campus observation than required and Group C members averaged 34.7 per cent above their minimum requirement. Transit time to and from an off-campus school ranged from a roundtrip period of 10 minutes to 105 minutes, with

TABLE 7

ADVANTAGES OF THE ON-CAMPUS PROGRAMED OBSERVATION TECHNIQUE REPORTED BY GROUP B

	No.	%
Broader idea of teaching from greater variety of grades and subjects observed	23	22.3
Eliminates transportation expense and inconvenience	21	20.4
Eliminates time scheduling problem	12	11.6
More observations possible in less time	8	7.8
Observed various characteristics of children and teachers in different districts and levels	7	6.8
Understood what was happening and why	6	5.8
Helped prepare for off-campus school observations	5	4.8
No risk of wasted time; experiences controlled and directed	4	3.9
Opportunity to discuss common observation experiences	3	2.9
Meaningful questions raised and answered	2	1.9
Observed total school, not just classroom	1	1.0
Could study classroom without being conspicuous	1	1.0
Could take notes during observation	1	1.0
Observed schools in which one might later want to teach	1	1.0
No advantages	8	7.8
Total	103	100.0

TABLE 8

ADVANTAGES OF THE OFF-CAMPUS CLASSROOM OBSERVATION TECHNIQUE REPORTED BY GROUP B

	No.	%
Experience reality of classroom atmosphere	29	25.4
Personal contact with teachers and students	25	21.9
Observe teachers meeting problems as they arise	15	13.2
Observe total school and classroom situation	12	10.5
Observe student-teacher relationships	9	7.9
Questions more completely and immediately answered	7	6.1
Able to participate	5	4.4
Gain understanding of individual students	5	4.4
More interesting and rewarding	5	4.4
Observe shortcomings of teachers and students	1	.9
Can concentrate on one child for period of time	1	.9
Total	114	100.0

the most customary roundtrip taking 30 minutes. Miles traveled per school visitation ranged from one to 70, with the customary roundtrip covering 15 to 20 miles. Nine of every 10 off-campus observers used a private automobile for transportation and three-fourths of the students drove alone in their own car. From travel route pattern data it was discovered that more students completed their off-campus observation between academic classes on the University campus than before coming to University classes, or following University classes,

or on days when the student had no academic classes scheduled. Evidence here and elsewhere in the study indicated that the factors of time, scheduling, and transportation expense were of little concern to the students when weighed against the value they feel they received from these off-campus experiences.

Staff administrative efficiency factors were concentrated about one graduate teaching assistant assigned to operate the off-campus observation unit. The administrator during the study was experienced in the responsibility and problems were minimal. Operational efficiency was high.

Administrative efficiency factors inherent in the on-campus programed observation technique

To determine the relative acceptance of the various types of audiovisual media employed in the on-campus programed unit, all students in Groups A and B rated certain programs using 16mm motion pictures, 35 mm sound filmstrips, 8mm motion pictures, and 35mm slide-tape presentations as to facts and ideas presented (Table 9), quality of the photography (Table 10), quality of the sound (Table 11), and interest level generated by the presentation (Table 12).

Generalizing, each medium communicated subject matter satisfactorily; sound filmstrips were of higher technical quality; and the 16mm films generated highest interest of the four types of media employed. Consistently, the specially-produced 8mm sound films and slide-tape programs received ratings lower than the other audiovisual media.

TABLE 9

PRESENTATION OF FACTS AND IDEAS IN ON-CAMPUS PROGRAMED LESSONS, BY MEDIA

	Authentic and Well-organized %	Acceptable but Poorly Organized %	Inaccurate %	Totals %
Period 2				
Color soundstrip	96.9	3.1		100.0
Color 16mm sound film	86.0	11.8	2.2	100.0
Period 3				
8mm sound film	64.0	35.0	3.0	100.0
Period 4				
14 color soundstrips	92.8	6.2	1.0	100.0
Period 5				
16mm kinescope	96.9	3.1		100.0
Period 6				
8mm sound film, soundslide	56.0	44.0		100.0
Mean	82.1	16.9	1.0	100.0

TABLE 10

TECHNICAL QUALITY OF THE PHOTOGRAPHY IN ON-CAMPUS PROGRAMED LESSONS, BY MEDIA

	Excellent %	Average %	Poor %	Totals %
Period 2				
Color soundstrip	66.7	33.3		100.0
Color 16mm sound film	55.8	44.2		100.0
Period 3				
8mm sound film	12.0	49.0	39.0	100.0
Period 4				
14 color soundstrips	67.3	28.6	4.1	100.0
Period 5				
16mm kinescope	42.0	51.0	7.0	100.0
Period 6				
8mm sound film, soundslide	19.2	59.6	21.2	100.0
Mean	43.8	44.3	11.9	100.0

TABLE 11

TECHNICAL QUALITY OF THE SOUND IN ON-CAMPUS PROGRAMED LESSONS, BY MEDIA

	Excellent %	Average %	Poor %	Totals %
Period 2				
Color soundstrip	43.9	54.1	2.0	100.0
Color 16mm sound film	35.9	64.1		100.0
Period 3				
8mm sound film	7.0	66.0	27.0	100.0
Period 4				
14 color soundstrips	52.5	44.4	3.1	100.0
Period 5				
16mm kinescope	39.8	53.8	6.4	100.0
Period 6				
8mm sound film, soundslide	12.2	44.9	42.9	100.0
Mean	31.9	54.6	13.5	100.0

TABLE 12

INTEREST LEVEL IN ON-CAMPUS PROGRAMED LESSONS, BY MEDIA

	High %	Average %	Low %	Totals %
Period 2				
Color soundstrip	51.0	46.0	3.0	100.0
Color 16mm sound film	65.2	31.5	3.3	100.0
Period 3				
8mm sound film	24.2	51.6	24.2	100.0
Period 4				
14 color soundstrips	53.1	38.5	8.4	100.0
Period 5				
16mm kinescope	71.4	25.5	3.1	100.0
Period 6				
8mm sound film, soundslide	19.2	41.4	39.4	100.0
Mean	47.4	39.1	13.5	100.0

It may be drawn from these findings that non-scripted, non-rehearsed, minimal-cost presentations have inherent shortcomings recognizable by even the unsophisticated instructional materials evaluator. Nevertheless, when both operationally and instructionally efficient ends must be served, it cannot be denied that the minimal-cost programs very significantly communicated common learnings as later measured by the post-test.

Administrative operational expense included the cost of photo and sound materials and personnel wages and travel expenses for the production of the on-campus filmed classroom observations. Of the 17 twenty-to-thirty minute lessons used during the 10-period unit, nine lessons were completed from the 14 slide-tape and 8mm sound films originally produced. Eight lessons used sound filmstrips and 16mm films purchased or rented from commercial distributors. Additional unit presentation expenses incurred were for the printed materials distributed to the students, and wages of the program engineer that conducted the 10-period on-campus observation unit. All equipment necessary to the production and presentation of the on-campus programed unit was owned by the University or loaned to the study by the investigator. The value of equipment employed by the study totaled $5,450.

The total production expense of the 14 slide-tape and 8mm sound motion picture programs amounted to $583.56, or an average of $41.68 each. This included completing nine programs with tape recorded preparatory and follow-up sequences.

Program presentation expenses included $120.50 for rental and purchase of photo-sound materials, $30 for printed materials, and $162 for wages of the program engineer--totaling $312.50.

The total expense of the 10-period programed observation unit, $687.62, when prorated among the 104 students in the on-campus experiment, amounted to $6.61 per observer. This amount compared favorably to one-half the automobile mileage expense incurred by the average control Group C student in completing the off-campus school observation requirement.

Assuming a continued use of the already-produced programed materials in small-group instruction, it is estimated the programs would not need replacement for at least four semesters. Amortizing total expenses over this period of time, the per student per semester expense would reduce to $2.02, or comparable in capital outlay by the University an expense less than the cost of one 16mm sound motion picture projector per semester. Further, an ongoing production program building a library of programed observation materials for use throughout the introductory sequence of professional education courses wherever common learnings and broader understandings were instructional objectives could be efficiently and realistically operated from this minimal-cost production-presentation base figure.

Feasible observation unit operational procedures

In comprising the findings of the on- and off-campus observational techniques it was possible to isolate nine factors

pertaining specifically to instructional effectiveness and five factors relating to administrative efficiency. A comparative appraisal of the strengths of the techniques found to exist during the period of the study would suggest ingredients to integrate into a feasible operational plan for future administerings of the EDTT 301 observation unit.

From the compendium of data collected, the investigator would evaluate the relative strengths of the on- and off-campus observation techniques, as presented during the study, in terms of instructional effectiveness factors as follows:

Instructional Effectiveness Factor	On-Campus	Off-Campus
Common learnings	superior	adequate
Broad understandings (variety)	superior	inadequate
Specific and individual needs	inadequate	superior
Preparation for observation activity	adequate	inadequate
Observation follow-up	inadequate	inadequate
Personal contact with pupils	none	inadequate
Participation (teacher's assistant)	none	inadequate
Enthusiasm toward teaching	adequate	superior
Teaching level and subjects decision	adequate	adequate

Based on the sum total of data gathered during the study, the investigator would evaluate the relative strengths of the two

observation techniques, on- and off-campus, as follows in terms of administrative efficiency:

Administrative Efficiency Factor	On-Campus	Off-Campus
Time scheduling conflict	none	insignificant
Transportation problems	none	insignificant
Expense to student	none	minimal
Inconvenience to student	none	minimal
Expense to administering department	minimal	minimal

The findings indicated that a more feasible observation unit operational plan would concentrate on enriching instructional effectiveness. The stated objectives for the observation unit are thoughtfully expansive and would appear to be better met in the future through combining the strengths of the on-campus and off-campus units, similar to the technique employed with Group B during the experiment. And where neither observational technique proved superior in terms of optimal learning, it is suggested the staff re-orient their conceptual approach to the observation unit into two basic administrative objectives: providing experiences for necessary common learnings, and providing experiences for student-felt, individual, specific needs. A procedure to implement these ends will be recommended in the concluding chapter of this report.

CHAPTER IV

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

It may be concluded from the collected findings of the study that the students in EDTT 301 during the fall 1961-62 semester learned from each observation technique sufficiently to meet current objectives of the course. The 10-hour on-campus plus 10-hour off-campus technique proved superior to the other techniques in the degree to which all stated observation unit objectives were met.

Principal shortcomings of the observation unit as traditionally administered were: (1) lack of preparation of the students by the staff both on-campus and off-campus in the techniques of observation, and lack of off-campus and on-campus individual and group follow-up procedures to evaluate the observation experiences and generalize into learnings for every student; (2) lack of participation by the student observers in the classroom, and lack of communication between the student observer and the teacher observed; (3) lack of attention to individual personal objectives in helping the student decide on a career in professional education; (4) lack of emphasis by staff on-campus and off-campus on the positive values and rewards offered by a career in professional education; and (5) lack of correlation between the observation activity and the lecture, required reading, and examination aspects of the course.

Student inconvenience factors of time, scheduling, expense, and transportation are insignificant in relation to the students' felt worth of the firsthand observation experiences. The attitude of expectation brought to this first professional education course could be exploited to even a greater degree if greater student effort were desired and demanded by the staff.

Conclusions are necessary in comparing the effectiveness of the various instructional media. Gilpin recently pinpointed a concern of educational methodology research in observing, "The problem exists with respect to comparisons both within and between media, but especially between them" (7:76).

This study compared the learning effectiveness of such projected audiovisual media as the motion picture, sound filmstrip,and slide-tape program with the field trip. However, rather than specific media comparisons of parallel factors, the study determined relative strengths of the various media in presenting specific areas of the teacher education curriculum. Consistent with previous educational media research findings, motion pictures, filmstrips, slides, and tape recordings were instructionally successful and were superior to the unstructured field trip, but the field trip in combination with any of the other audiovisual media produced learning superior to any medium by itself. Caution is advised in making generalizations, however, for the field trip activity was unstructured, approached at will as an active or passive experience, self-administered, and without pre-planned organization for specific

common learnings comparable to those communicated by the pre-programmed projected audiovisual media.

A final conclusion is that locally-produced, minimal-cost instructional materials proved feasible for the purpose intended, especially in the areas of broad understandings and common learnings. Instructional efficiency is not necessarily correlative to technical proficiency. The filmed observations, however, did not present a classroom overview continuity experience equivalent to the first-hand technique. The problems of capturing on film a "normal" classroom in operation and recording intelligible sound from the teacher and all students at the same time were the most significant shortcomings of the minimal-cost instructional materials methodology.

Recommendations

The major recommendation growing out of this study is directed at the total course, EDTT 301, and a redeployment of instructional resources to increase the level of learning achievement by all students in meeting the stated objectives of the course. With the teaching media already employed in the course--lecture, discussion, field trip, programed film and recording, and written examination--it is recommended that an ongoing research program investigate the restructuring of the entire course using an ends-centered approach. Certain aspects of the current course methodology are the result of a means-centered approach. However, with past teacher education and current instructional technology research to

build from, the following recommendations are suggestive of more research toward rearrangement of existing factors than a course reorganization or completely new methodological approach.

1. Consideration should be given to a possible administrative restructuring of the course into a 5-hour per week lecture-discussion-laboratory block, with two lectures being devoted to the content presently covered in three, and the remaining lecture period and two hours of laboratory devoted to the observation activity. This structure would allow for experimentation in team teaching, group field trips, and integration of individual off-campus experiences into total-group common learnings. Pre-observation preparation would also be served, and staff time would become available to improve liaison with principals and teachers in schools used for observing.
2. Course methodology should be based on an analysis of common learnings and specific learnings factors. When possible, a learning program to meet the specific needs of the individual student should be determined; and content presentation should be developed and programed using media most operationally efficient to meet desired course learning outcomes.
3. Learning achievement evaluative devices should be employed in all aspects of the course. Common learnings from observation could be tested during lecture periods. Individual learnings presentations, whether by self- or small

group-instruction, would be programed with built-in review and reinforcement techniques and treated as tests of achievement. All evaluations of student achievement would weigh in determining the course final grade.

4. Ask teachers in off-campus classrooms observed, as well as school administrators involved, to complete an evaluative checklist on participation activities undertaken by the student observer.
5. An observation reporting instrument primarily of value to the student during observation and in later professional education coursework should be developed. Secondarily, it would be important as a record of observation requirements met.
6. From the present core of filmed observation experiences, an ongoing production program of specific and common learning experiences should be programed for individual and small-group instruction, utilizing the facilities of the instructional systems laboratory of the Department of Instructional Technology within the School of Education of the University. Such a long-range plan might well also contemplate the programed learning needs of the entire introductory sequence of professional education courses.

Several recommendations for further study evolved from findings pertaining to improved educational methodology as the result of a more precise utilization of the newer instructional media.

While the collective findings of the several NDEA-financed newer media studies point to the adequacy of film and television observation experiences, a production methodology is yet needed to capture a classroom in normal operation. Television has proved an answer, but not a complete one, for permanency is requisite to long-range utility. By videotaping continuously-televised classrooms, then editing the tapes to select the desired learning experiences and re-recording on 8mm sound film, a library of permanent and precise instructional materials would accrue. This production methodology coupled with distribution facilities to serve the many interested teacher training institutions in the country would appear to be the next obvious step in the newer-media-in-teacher-education research program.

Meanwhile, a growing body of locally-produced 16mm films and kinescopes has developed as a result of the several NDEA-financed newer media studies in the teacher education area. It is recommended that further investigation be made into a feasible distribution plan to make these films available to interested institutions throughout the country.

Finally, this study found that further investigation is needed as to the place of the 8mm sound motion picture as an instructional tool. Research is needed to explore the miniature character format of 8mm to develop more communicative styles of expression. The minimal-cost feature of 8mm sound film is enticing to the educator, but other features need to be studied to isolate

superior instructional qualities and delineate the contribution potential of 8mm film from other instructional media.

BIBLIOGRAPHY

Books

1. Follis, Lee. The Use of Closed Circuit Television to Improve Teacher Effectiveness. Fontana, California: Fontana Unified School District, 1961.

2. Fulton, W. R., and Rupiper, O. J. Selected Vicarious Experiences Versus Direct Observational Experiences of Pre-Service Teachers in the Foundation Areas of Professional Preparation at the University of Oklahoma. Norman: University of Oklahoma College of Education, 1961.

3. Georgiades, William, and Olson, Myron S. Syllabus for Education TT 301, The Teacher and the School. Los Angeles: University of Southern California School of Education, 1959.

4. Painter, William I. Production and Use of Classrooms on Film Versus Traditional Observations in Teacher Education. Akron, Ohio: The University of Akron, 1961.

5. Patrick, Robert B. The Measurement of the Effectiveness of the Documentary Sound-Film as a Supplement in the Teaching of Methods to College Students Being Prepared to Teach in the Secondary Schools. University Park, Pennsylvania: Pennsylvania State University, 1962.

6. Schueler, Herbert. Television for Teacher Education. New York: Hunter College, 1961.

Periodical Articles

7. Gilpin, John. "Designed Evaluation of Instructional Systems," Audio-Visual Communication Review, 10:76, March-April, 1962.

Published Tests

8. Cooperative School and College Ability Tests: College Ability Tests. Princeton: Educational Testing Service, Cooperative Test Division, 1955.

APPENDIX

DATA-GATHERING FORMS AND PRIMARY TEST INSTRUMENT

NDEA-DPW-10/6/61

USC-EDTT 301
Pre-Observation Questionnaire

FULL NAME (please print) _____

1) Check below the hours that you will be available for classroom observation each week throughout the semester:

	9	10	11	1	2
Monday					
Tuesday					
Wednesday					
Thursday					
Friday					

2) If you are making arrangements on your own for classroom observation experience, in what school district will you be observing?

_____

3) What is your academic emphasis at this time at U.S.C.?

Major Subject: _____
Minor Subject: _____

4) List, in order of priority, the grades you are most interested in teaching: 1)_____ 2) _____ 3)_____

5) List, in order of priority, the subjects you are most interested in teaching: 1)_____ 2) _____ 3)_____

6) Are any members of your family in the teaching profession?_____

7) What is your father's occupation? _____

_____

8) If your mother has worked outside the home at any time during the past 20 years, what was her occupation?_____

_____

9) How many brothers_____ and sisters _____ have you?

10) What are their ages? _____

11) What youth groups have you participated in (i.e. scouting, Camp Fire Girls, church groups, Jobs Daughters, summer camps, etc.)?

_____

_____

12) Have you ever been a leader or counselor with youth groups? ____

13) Have you ever been a member of a Future Teacher organization? ____

14) Have you observed in school classrooms before this semester? ____
Thru another college? _____ During high school? _____
Or Jr. Hi? _____

15) How and when were you influenced to choose a career in teaching?

_____

_____

EDTT 301
1961-62 Post-Observation Questionnaire Page 1

DO NOT WRITE YOUR NAME ON ANY OF THE PAGES OF THIS QUESTIONNAIRE. WHEN YOU HAVE COMPLETED THE QUESTIONNAIRE, PUT THE PAGES IN THE MANILA FILE FOLDER WITH YOUR NAME ON THE TAB AND TURN IN TO MR. WEDBERG.

All Observation Reports are due today. Place them in the file folder, also. If you have not completed your Reports, you may turn them in at Annex 101 through Friday of this week (January 12th).

The MIDTEST make-up (College I.Q.) will be given every day this week in Annex 100 from 12 noon to 1:10 (70 minutes). Those that fail to take the MIDTEST this week will take it immediately following the final examination for EDTT 301.

Complete the following questionnaire thoughtfully. Answer only those parts that are required of the group you are in (A-10 hours; B-20 hours; C-30 hours). Write legibly; these sheets will be reproduced for distribution and evaluation to other parts of the country. BEGIN

Groups A, B, and C:

1. List, in order of priority, the grades you are most interested in teaching: 1) _____ 2) _____ 3) _____

2. List, in order of priority, the subjects you are most interested in teaching: 1) _____ 2) _____ 3) _____

3. To best meet the objectives of the EDTT 301 observation unit, what recommendations can you suggest to make the unit more meaningful to students in their first course in teacher education? (PLEASE ANSWER ON BACK OF THIS SHEET)

4. How would you evaluate the observation experience? (Unit diary, short daily observation reports, or _____?) (PLEASE ANSWER ON BACK OF THIS SHEET)

5. Based on your on-campus and/or off-campus observation experience this semester, write a brief paragraph on the topic: WHAT IT MEANS TO BE A TEACHER. (PLEASE WRITE IN THE SPACE BELOW)

Groups A & B only:

6. Rank the following 7 teaching responsibilities (1,2,3, etc.) according to degree (amount)of understanding gained from the sum total of your U.S.C. on-campus observation experiences.

_____student growth
_____instructional effectiveness
_____teacher-student relationship
_____classroom management
_____physical and mental fitness for teaching
_____contributions to school beyond classroom
_____professional ethics and basic attitudes toward the teaching profession

Groups B & C only:

7. Rank the following 7 teaching responsibilities (1,2,3, etc.) according to degree (amount) of understanding gained from the sum total of your off-campus observation experiences.

_____student growth
_____instructional effectiveness
_____teacher-student relationship
_____classroom management
_____physical and mental fitness for teaching
_____contributions to school beyond classroom
_____professional ethics and basic attitudes toward the teaching profession

Group B only:

8. List the advantages of the on-campus observation technique as compared to the off-campus observation. (PLEASE WRITE IN THE SPACE BELOW)

9. List the advantages of the off-campus observation technique as compared to the on-campus observation. (PLEASE WRITE IN THE SPACE BELOW)

EDTT 301 Classroom Observation Report WEDBERG

Complete this report for each observation visit. If more than one teacher and class is observed during a school visit, complete a report for each.

NAME: _____ OBSERVATION DATE: _____

NAME OF SCHOOL: _____ DISTRICT: _____

1. How long were you at the school? _____ hours
2. Travel time to and from the school? _____ hours
3. Estimated mileage to and from the school (total)? _____ miles
4. Did you travel from USC____ or your residence ____ to the school?
5. Did you travel to USC_____ or your residence_____ from the school?
6. Means of transportation to and from the School? _____
7. If you traveled by auto, were you the driver____ or a passenger? _____
8. What grade level was the class you visited? _____
9. Was the teacher a man_____ or a woman _____?
10. Was this a slow _____, average_____, or accelerated _____ class of students?
11. Subject(s) taught during observation visit? _____
12. What, if any, duties did you assist with during your visit?

    _____

13. How did the teacher interpret to you the significance of the activities and procedures of the class? _____

    _____

14. What did you observe about the school outside the classroom?

    _____

15. Briefly, explain what you learned from this observation experience that you did not already know: _____

    _____

    _____

16. What questions developed from this observation experience that still need to be answered? _____

    _____

    _____

CHECK your answers to the following as to:

	YES	NO	DIDN'T OBSERVE
A. Did the students work with purpose toward their goals?	____	____	____
B. Did each student make a contribution to the group?	____	____	____
C. Were students helping each other?	____	____	____

	YES	NO	DIDN'T OBSERVE
D. Was the teacher friendly to the students while maintaining the role of an adult?	___	___	___
E. Were the students guided in securing and utilizing information which promotes concept development?	___	___	___
F. Were students helped to evaluate their own work and that of the group?	___	___	___
G. Did the teacher accept students' ideas and incorporate them in the learning process?	___	___	___
H. Did the teacher contribute to the school outside the classroom?	___	___	___
I. Was the classroom organized in work and interest centers to meet individual and group needs?	___	___	___
J. Did the students participate in planning and organizing the learning environment?	___	___	___
K. Were instructional materials organized so that they were accessible to and usable by the students?	___	___	___
L. Did the arrangement of furniture allow for ease of traffic, flexibility of working groups, and for friendly informal relationships?	___	___	___

NDEA-USC
61-62

Post-Observation Test

EDTT 301
Obs. Exp.

For this test you will need, in addition to this question booklet, an IBM answer sheet and a special carbon pencil. On the answer sheet, write your name and the date. Use the special carbon pencil to mark your answer to each question on the answer sheet. Please do not mark on this booklet of questions. BEGIN.

The following 60 items are designed to measure your present understanding of the teacher and the school. You will not be positive of the answer to some of the items, but it is necessary that you MARK ONE ANSWER FOR EVERY QUESTION. Select the answer that seems most correct to you today.

- -

Part I The following statements and terms are to be related to four basic classroom teacher responsibilities. If the statement, for example, is related closest to the teaching (instructional) function of the teacher, mark between the dotted lines in column 1 on the answer sheet. You have five possible answers to choose from:

1. TEACHING (instruction, learning, etc.)
2. ADMINISTERING (classroom management, routine, discipline)
3. SUPPORTING (serving the total school community)
4. COUNSELING (non-instructional student guidance)
5. COMBINATION of two or more of the above four functions

1. "There's morning duty, noon, duty, hall duty. . . ."
2. "I said Q-U-I-E-T!"
3. "You'll just have to learn to pretend you don't see."
4. "And I was so sure he was telling the truth."
5. "What notice was that?"
6. "After all, she doesn"t have him all day."
7. "Another student, and that makes 46!"
8. "These noisy lunch rooms are killing me."
9. "You'll tell your mother about whom?"
10. "But I had the last collection drive."
11. "Caught him in the act that time!"
12. "And he still did it wrong."
13. "What do I do next?"
14. "He would have fire drill on a day like this."
15. "He and his theory! Phooey!"
16. "Well they can be little angels once in a while."
17. "Cum" record
18. Room environment
19. Sociogram

20. Child-centered classroom
21. Subject-centered classroom
22. Field trip
23. Parent-teacher conference
24. P.T.A. meeting
25. Directing a high school play
26. Directing an elementary school pageant
27. Sponsoring a school club
28. Operating a language laboratory
29. Collecting milk money
30. Working on the Register
31. Homework for student
32. Homework for teacher
33. Drill

- -

Part II Following are the 5 basic principles of the NEA Code of Ethics for Teachers. The statements that follow are responsibilities that apply to all persons engaged in the professional aspects of education.

1. The primary obligation of the teaching profession is to guide children, youth, and adults in the pursuit of knowledge and skills, to prepare them in the ways of democracy, and to help them to become happy, useful, self-supporting citizens.

2. The members of the teaching profession share with parents the task of shaping each student's purposes and acts toward socially acceptable ends.

3. The teaching profession occupies a position of public trust involving not only the individual teacher's personal conduct, but also the interaction of the school and community.

4. The members of the teaching profession have inescapable obligations with respect to employment. These obligations are nearly always shared employer-employee responsibilities based upon mutual respect and good faith.

5. The teaching profession is distinguished from many other occupations by the uniqueness and quality of the professional relationships among all teachers. Community support and respect are influenced by the standards of teachers and their attitudes toward teaching and other teachers.

34. Conduct professional business through the proper channels.

35. Perform the duties of citizenship, and participate in community activities with due consideration for his obligations to his students, his family, and himself.

36. Deal with other members of the profession in the same manner as he himself wishes to be treated.

37. Discuss controversial issues from an objective point of view, thereby keeping his class free from partisan opinions.

38. Keep parents informed about the progress of their children as interpreted in terms of the purposes of the school.

39. Refrain from discussing confidential and official information with unauthorized persons.

40. Seek to make professional growth continuous by such procedures as study, research, travel, conferences, and attendance at professional meetings.

- -

Part III Multiple Choice--On the answer sheet, write the number of the answer that seems most right to you of the five choices.

41. A class of students grouped together by similar mental ages (intelligence) is called: (1) retarded, (2) normal, (3) gifted, (4) homogeneous, (5) heterogeneous.

42. A class of students grouped according to chronological age is called (1) retarded, (2) normal, (3) gifted, (4) homogeneous, (5) heterogeneous.

43. The advent of educational television in the classroom has developed the concept of: (1) the right tool in the right place at the right time, (2) the master teacher, (3) team teaching, (4) the standardized curriculum, (5) more learning to more students.

44. The democratic teaching method is more often employed in a high school (1) civics, (2) typing, (3) Latin, (4) geometry, (5) chemistry class.

45. Compared to a 4th grade class in arithmetic, the teacher of a 9th grade algebra class would employ a more (1) permissive,

(2) democratic, (3) authoritarian, (4) laissez faire, (5) group dynamic teaching method.

46. Many and varied activities are used by the successful primary teacher to take advantage of the pupils' (1) need for constant activity, (2) short attention span, (3) keen curiosity, (4) dependence on concrete experience, (5) all of these.

47. Greatest concern for the development of the "total" individual is found at the (1) primary, (2) intermediate, (3) upper elementary, (4) junior high, (5) senior high level.

48. Interest in teams, showing a developing ability to cooperate with a group, is a characteristic of the (1) 1st grader, (2) 3rd grader, (3) 5th grader, (4) 7th grader, (5) none of these.

49. An emerging desire for personal freedom is a characteristic of the (1) 1st grader, (2) 3rd grader, (3) 5th grader, (4) 7th grader, (5) none of these.

50. A pronounced vocational interest is a characteristic of the (1) 1st grader, (2) 3rd grader, (3) 5th grader, (4) 7th grader, (5) none of these.

51. The most constant characteristic of the student as he progresses through the elementary grades is (1) variety of interest, (2) attention span, (3) need for group participation, (4) competitive spirit, (5) self-consciousness.

52. The most reliable source of information on the scholastic ability of a new student in class would result from the teacher (1) talking to the previous teacher, (2) talking to the parents, (3) administering an I.Q. test, (4) averaging homework grades for a week, (5) examining the cumulative record card.

53. The classroom teacher is responsible for everything that goes on in the classroom, except: (1) what to teach, (2) how to teach, (3) classroom management, (4) guidance, (5) room environment.

54. The elementary teacher that emphasizes "doing" more than "listening" understands that (1) real experience is always the best teacher, (2) attention span is short, (3) more individual differences can be reached, (4) generalizations based on a variety of experiences produce optimum learning, (5) elementary students haven't achieved the maturation to learn by listening.

55. Research in classroom TV has shown that students are able to learn (1) better from TV, (2) better from lectures, (3) better from regular face-to-face instruction, (4) better from educational films, (5) none of these.

56. For presenting direct instruction by TV, the chief responsibility should lie with (1) the master teacher, (2) the curriculum coordinator, (3) the classroom teacher, (4) a team composed of all of these, (5) none of the above answers.

57. Role-playing as a learning technique is used less by secondary teachers than elementary teachers in the classroom because: (1) the secondary classroom is subject-matter oriented, (2) students become more self-conscious as they grow older, (3) it is too time-consuming in light of the "knowledge explosion," (4) creative activities are more important in elementary classrooms, (5) role-playing is primarily a personal guidance technique.

58. A premium is placed on two-way communication in the (1) child-centered classroom, (2) subject-centered classroom, (3) educational TV classroom, (4) retarded classroom, (5) gifted classroom.

59. Of the 25% of the students that enter the public schools but leave before high school graduation, most do so because of: (1) work-education opportunities, (2) marriage, (3) need to support parents, (4) school work becomes too difficult, (5) disinterest.

60. The primary justification for the existence of the total school community, including federal, state, and local administrative units, is to (1) insure the individual rights of the teacher in the classroom, (2) help the classroom teacher guide students to become happy, useful, self-supporting citizens, (3) guarantee equal opportunity to every student in the classroom, (4) provide educational services at the community level equal to other tax-supported public services, (5) improve the quality of teaching democracy and the principle of representative government at the local level.

- -

Please hand in this booklet, your answer sheet, and pencil.